

Gaint Sialolith of The Wharton S Duct of Salivary Gland – A Case Report

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Abstract

The most common cause of salivary gland obstruction is sialolithiasis. Salivary calculi or sialolith or salivary stone can occur in any salivary gland duct but most commonly it is seen in submandibular gland's duct. This case report discusses diagnosis and surgical management of a large sialolith.

INTRODUCTION

Sialolithiasis is considered to be the most common salivary gland disorder and it accounts for about 1.2% of unilateral major salivary gland swelling. Submandibular gland has got highest predilection for sialolithiasis with 80% occurrence rate, followed by 19% in the parotid and 1% in the sublingual glands.¹ Sialolithiasis usually appears between the age of 30 and 60 years, and it is uncommon in children as only 3% of all sialolithiasis cases has been reported in the pediatric population until to date. Males are affected twice as much as females.² Some factors inherent to the sub-mandibular gland tend to favor stone formation there like longer and larger caliber duct, flow against gravity, slower flow rates and higher alkalinity along with higher mucin and calcium content of the saliva.³ Most patients present with acute swelling of the submandibular or parotid gland with recurrent swelling. The swelling and discomfort can be exacerbated during meals particularly when patients takes sour or acidic food. Physical findings include an enlarged tender gland with occasional edema and erythema of the soft tissue, purulent secretions from the duct and cervical lymphadenitis. Plain X-Rays help in quick confirmation of the stones, however 20% of the submandibular stones are radiolucent leading to false-negative results. CT scan with or without contrast is helpful to reach diagnosis, however MRI is a more useful adjunct in the management of such patients, especially while diagnosing small stones.⁴ Sialoendoscopy allows endoscopic transluminal visualization of salivary gland ducts and it is a new technique that helps in reaching quick diagnosis.⁵ Commonly sialoliths are 1 cm in dimension but rarely they measure greater

than 1.5 cms in dimension. In one of the patients presented here, sialolith measured 2.2cms in greatest dimension. The treatment of choice is removal of the sialolith. Removal may be done even during an acute inflammatory stage, if the sialolith can easily be reached and the infected gland is drained at the same time. In deeply situated sialoliths, the infection should first be controlled with antibiotics. A brief discussion based on the clinical examination, investigation and management of sialolithiasis is being reported. None of the patients had recurrence or lingual nerve paresthesia/deficit at long-term follow- up ranging from 2 years- 4 years.

Case Report

A 48 year old male patient reported the department of dentistry, Dr RPGMC Kangra at Tanda with the history of recurrent pain and swelling of the right side of lower jaw for last 2 months. He already visited some of the doctor at their native place who gave him antibiotics and analgesic as they suspect a carious 3rd molar with pulp exposure but patient didn't get any relief. Examination showed a localised swelling below the right angle of the mandible. There was pus discharge focal to floor of mouth. Bimanual palpation of the right submandibular salivary gland

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indicated that it was enlarged, hard and mobile. OPG was done which shows sialolith. There was no evidence of acute infection of the gland or soft tissues. On the basis of clinical and radiological finding, final diagnosis was submandibular duct sialolithiasis. The treatment of choice was the removal of the obstructing stone by an intraoral approach.

Surgery /Approach-

The patient managed using the intra-oral approach under local anesthesia. A circumferential suture was placed around the stone and proximal to the stone, hence preventing it from slipping back. An incision was made at the site of the stone in the floor of the mouth. Dissection was done with extreme care taking care to avoid any damage to the lingual nerve. Ductal incision was made over the stone to allow extraction of the stone. The duct was sutured using 4-0 vicryl suture to the floor of the mouth. The patients were followed for 2 years at follow-ups ranging from 1 week, 2 week, 1 month, 6 months and 1 year.

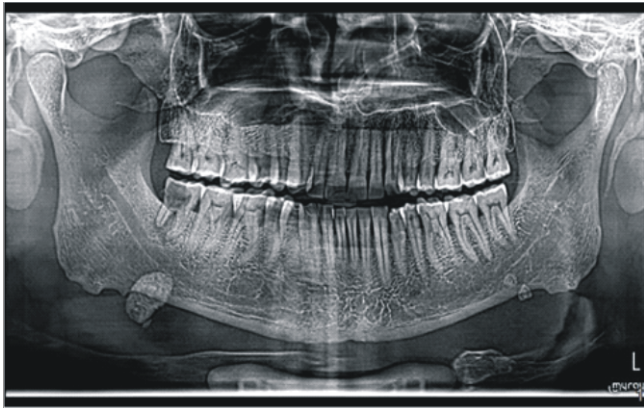


Fig 1: OPG showing the sialolith

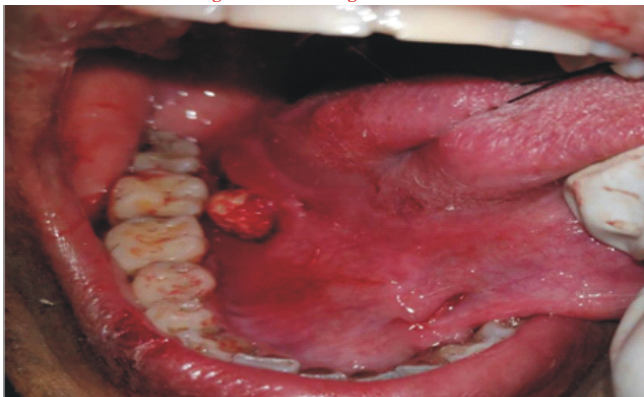


Fig 2: Intra- oral view showing the surgical site



Fig. 3 Sialolith measuring 2.2cms X 1.2cms in size

DISCUSSION

Sialolithiasis of the submandibular gland can be completely asymptomatic. Common symptoms vary from a painless swelling, moderate discomfort to severe pain with large glandular swelling accompanied by trismus and usually associated with eating. Sialoliths are commonly 1-10 mm in size, but giant sialoliths (greater than 3.5 cm) have been reported occasionally. The sialolith has a round or ovoid shape, a porous texture and a pale yellow color. Examples larger than 15 mm are considered giant calculi, of which only a handful of cases have been reported¹. Symptoms of sialolithiasis do not differ much from the symptoms of other salivary duct obstruction causes. They include: a transient, painful, postprandial oedema of the salivary gland, gradually retreating in 2-3 hours, and pain during meals. A decreased production of the saliva may be observed as well. Complications of sialolithiasis include: secondary infections, abscess, salivary duct stenoses, mucocoele, Kuttner's tumour and glandular parenchyma atrophy in chronic states. Basic imaging methods of sialolithiasis are: X-ray images, X-ray sialography, ultrasonography (US), computed tomography (CT), magnetic resonance imaging (MRI). Sialoendoscopy, which is also a therapeutic method, is becoming increasingly common.

Traditionally, surgical techniques are determined by the location of the calculi. Intraoral sialolithotomy can be performed if the stone is in the distal portion of the duct, especially submandibular, that is palpable within the oral cavity. The procedure may need incision or just forward milking to retrieve the calculus. Interventional sialendoscopy is a new and less invasive procedure by which distal calculi can be removed with microforceps and basket, with or without laser fragmentation. This treatment option is preferably applied to the pediatric population, since the calculi in children are smaller and distally located compared to those in adults. Sialadenectomy is required for those sialoliths which are in the proximal part of the duct or within the gland, and cannot be palpated intraorally.

Shock wave lithotripsy is a recently updated alternative technology which is minimally invasive and carries fewer risks than surgical procedure. Extracorporeal shock wave lithotripsy utilizes shockwaves from outside the body to split calculi into fragments that are small enough for spontaneous washout. Endoscopic intracorporeal shock wave lithotripsy was introduced more recently.

In our case, after identifying and isolating Wharton's duct and examination of significant anatomic structure an initial incision was made anteriorly in the suture confined area. As the duct ascends anteriorly the movement of the sialolith will be in an anterosuperior direction so that the anterior third is relatively close to the surface mucosa. The duct adjacent to the medial surface of sublingual gland whose superior projection is manifested by the raised plica-sublingualis. A 2 cm incision was made medial and parallel to the plica extending from the cuspid to the second bicuspid region. If made laterally the dissection to locate the duct would perforate and injure the sublingual gland increasing the risk of an iatrogenically induced oral ranula attention needs to be

given medial to the second molar in the midportion of the duct to the crossing lingual nerve. The completion of the procedure can be done by either a primary closure or sialodochoplasty. If primary closure is done, do not suture the incised duct wall, because this will increase the risk of stenosis. To reduce the extent of oral floor swelling from the salivary leakage and postsurgical edema, a tight mucosal closure is contraindicated and surgical drains are mandatory. A definitive risk for this procedure is increasing the severity of precondition of salivary stasis and also the risk of recurrence. This can be avoided by a dochoplasty.

To conclude in our case report large sialoliths measuring 2.2X1.2cms was removed using the standard procedure and no complications at long term follow up reported.

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